

V.3.3-RES-SNGL-SPEC-MAXQ SINGLE RESERVOIR REGULATION OPERATION
UTILITY MAXIMUM DAM OUTFLOW

Purpose

Utility MAXQ is used to determine the maximum possible discharge from a dam at the current pool elevation (the model pool elevation at the time of elevation).

Input Summary

<u>Keyword</u>	<u>Definition and Format</u>
MAXQ <u>1</u> /	Input opening keyword for utility
<u>PARMS</u>	Parameter opening keyword for utility
[ELVSMAXQ] <u>3</u> /	Elevation versus maximum discharge curve: <ul style="list-style-type: none">- 'j' values of elevation followed by- 'j' values of maximum discharge- elevations<ul style="list-style-type: none">- real- within ELVSSTOR curve <u>2</u>/- ascending order- discharges<ul style="list-style-type: none">- real- positive values- ascending order
[ELVSQ] <u>3</u> /	Elevation versus discharge curve <ul style="list-style-type: none">- allowed only if ELVSMAXQ not entered If defined here: <ul style="list-style-type: none">- 'j' values of elevation followed by- 'j' of discharge- elevations<ul style="list-style-type: none">- real- within ELVSSTOR curve- ascending order- discharges<ul style="list-style-type: none">- real- positive values- ascending order If referenced to original location: <ul style="list-style-type: none">- name and level number of scheme in which originally defined
[CONSTQ] <u>3</u> /	Constant non-spillway maximum discharge: <ul style="list-style-type: none">- allowed only if ELVSQ was entered- real, positive value
[HEADVSQ] <u>3</u> /	Head versus discharge curve: <ul style="list-style-type: none">- allowed only if ELVSQ was entered and CONSTQ was not entered if defined here:

Keyword

Definition and Format

- 'j' head values followed by 'j' discharge values
- heads
 - real, positive values
 - ascending order
- discharges
 - real, positive values
 - ascending order

if referenced to original definition:

- name and level number of scheme in which it was originally defined

[TWCURVE] 3/

Tailwater Rating Curve name:

- needed only if HEADVSQ entered
- 8 character name
- must be defined by program FCINIT command DEF-RC
- must match name of any other tailwater rating curve used in Reservoir Operation

[CONV] 3/

Convergence criterion for curve construction:

- needed only if HEADVSQ entered
- between 0.0 and 1.0
- defaulted to 0.02

ENDPARMS

Parameter ending keyword for utility

ENDMAXQ

Input ending keyword for utility

Notes:

- 1/ No time series or carryover are needed to define this utility.
- 2/ ELVSSTOR is the elevation versus storage curve defined in the general parameter section.
- 3/ The maximum discharge curve can be defined in a number of ways:
 - a. The curve can be entered directly using the ELVSMAXQ keyword. In this case, no other keyword is allowed.
 - b. The curve can be constructed as a combination of an elevation vs. discharge curve (ELVSQ keyword) and a constant non-spillway maximum discharge (CONSTQ keyword). In this case, these are the only two parameters necessary and allowed.
 - c. If the tailwater significantly affects the non-spillway discharge, the elevation vs. maximum discharge curve is constructed of the elevations vs. discharge curve (ELVSQ keyword), a head vs. non-spillway discharge curve (HEADVSQ keyword), and a tailwater rating curve (TWCURVE keyword). In this case, neither the ELVSMAXQ or the CONSTQ keywords are allowed. The convergence criteria (CONV keyword) is

allowed only for this case, but it is optional.

At least one of the above three combinations of keywords must be entered.